



*In Bangladesh there is no national prevalence data on reproductive tract infection (RTIs) or sexually transmitted infections (STIs). However, the limited number of prevalence studies point to an alarmingly high number of women who have confirmed infections. A clinic-based study found 60 percent of women suffering from RTIs, including nearly 4 percent with gonorrhoea and less than one percent syphilis (Chowdhury et al., 1995), while a rural study found 56 percent of women had RTIs of which 23 percent were STIs (Hussain et al., 1996). An earlier study in Matlab Thana found 22 percent of women reported symptoms consistent with RTIs. On clinical examination, 68 percent of them were confirmed (Wasserheit et al., 1989).*

*Both social conditions and traditional health practices for women favor a continued high prevalence of RTIs in Bangladesh. The population is increasingly mobile, with rapid urbanization within the country and out-migration for workers to neighboring countries. Traditional health practices predominate during menstruation and child birth are a source of infection.*

*When women have an RTI, the "culture of silence" and shame which accompany the condition negatively influences treatment seeking behavior, as does access to services and costs (Hussain et al., 1996). Though some of the RTIs are not sexually transmitted, infected women may not know the difference and fail to seek treatment, thus suffering needless morbidity.*

*Family planning programs can perform a critical role in providing information and clinical services to women who contract RTIs. There are five essential reasons: (1) family planning and RTIs services are required by the same client groups -- sexually active couples; (2) providers need the same skills for both types of clients; (3) both programs aim at modifying sexual behavior; (4) condoms and other barrier methods are essential for the prevention of RTIs and can be used for pregnancy prevention; and, (5) since the RTIs can negatively affect the health of both a pregnant mother and her infant, the diagnosis and management during pregnancy is particularly important (Pachauri, 1995).*

*This Policy Dialogue will describe the present situation in Bangladesh concerning RTIs/STIs. It will report on the diagnosis and treatment available in family planning service points; define an approach to RTI services; highlight the quality issues in the current family planning services delivery program which affect RTI services; review the costs of providing RTI services; and, outline policy questions.*

## **WHAT IS THE NEED FOR RTI SERVICES?**

Reproductive tract infections (RTIs) can effect the lives of the majority of women of reproductive age. These can be sexually transmitted infections (STIs) or infections which are caused through unhygienic practices during menstruation, child birth or during the delivery of family planning services. Whatever the root cause, RTIs can have a profound effect on women's health.

Infections of the cervix by **gonococcal** and **chlamydial cervicitis** can ascend in the reproductive tract and cause pelvic inflammatory disease (PID). PID can lead to ectopic pregnancy, infertility, foetal wastage, low birth weight babies or blindness in newborns. **Syphilitic** infection of the mother can lead to congenital infection of the foetus and mental retardation. **Bacterial vaginosis**, can cause premature delivery and low birth weight babies. RTIs increase the transmission of potentially fatal infections like HIV/AIDS.

There are three reasons to emphasize RTI services in Bangladesh today: (1) to improve the health of women of reproductive age; (2) to potentially change the current low continuation rates of family planning methods and, (3) to overcome low acceptance rates of IUDs. Though

quite different reasons, these are interrelated.

## **WHAT DO WE KNOW ABOUT THE PREVALENCE OF RTIs IN BANGLADESH?**

Three studies have been done to determine the prevalence of RTIs and STIs in Bangladesh. Each used a slightly different approach but arrived at similar levels of prevalence.

In Matlab Thana (Wasserheit, 1989) a population-based study of nearly 3000 women was conducted. Twenty-two percent of the women reported symptoms of RTIs. When examined, 68 percent of those women had confirmed evidence of infection. Factors which influenced the presence of RTIs included IUD and tubectomy acceptance. **More than one-third of IUD users and tubectomized women complained of symptoms, while less than 10 percent of nonusers and approximately 15 percent of hormonal method users believed that an abnormality consistent with RTI was present. Examination-confirmed, symptomatic infection was also seven times as common among IUD users and tubectomized women as among nonusers.**

Health care users in a Bangladesh Women's Health Coalition urban clinic were studied to determine RTI

prevalence (Chowdhury et al., 1995). The study sample included regular clients of the clinic, newly registered clients but excluded antenatal and lactating women. Mean age of marriage of the respondents was 15.5 years and age at first child birth was nearly 18. **The early age of marriage and child birth indirectly reflects early initiation of sexual activity.** Final diagnosis based on laboratory findings showed an RTI prevalence of 60 percent. Bacterial vaginosis was the most common type of infection. The prevalence of syphilis alone was 0.5 percent, of gonorrhoea nearly 4 percent and a combination of syphilis and gonorrhoea was found in 0.5 percent of cases.

Save the Children (USA) conducted two studies in a rural area. One study determined prevalence of RTIs and treatment seeking behavior while the second used qualitative approaches to examine sexual behavior of the population (Hussain et al., 1996 and Naved, 1996). In their sample of rural women, they found 56 percent prevalence of RTIs. Twenty four percent of those were STIs. The majority of STIs were chlamydia infections, while gonorrhoea was diagnosed in one percent of cases. There was no syphilis found.

Treatment had been sought by 67 percent of the women infected. A village health practitioner, a traditional

method or "Bangla treatment" was selected by most women for treatment. Health and Family Welfare Center (HFWC) or Thana Health Complex (THC) were used by only 11 percent of those who were treated. The most important reason for choosing a particular treatment was "husband suggested". Infected men sought treatment outside the immediate community, whereas women were limited to village-based practitioners.

It is important to note for the family planning program service providers that the use of HFWC or THC is mentioned in less than 11 percent of cases as a place for RTI treatment.

Women discussed RTI problems with their husband in 47 percent of cases while they mentioned discussing the problem with TBAs in only

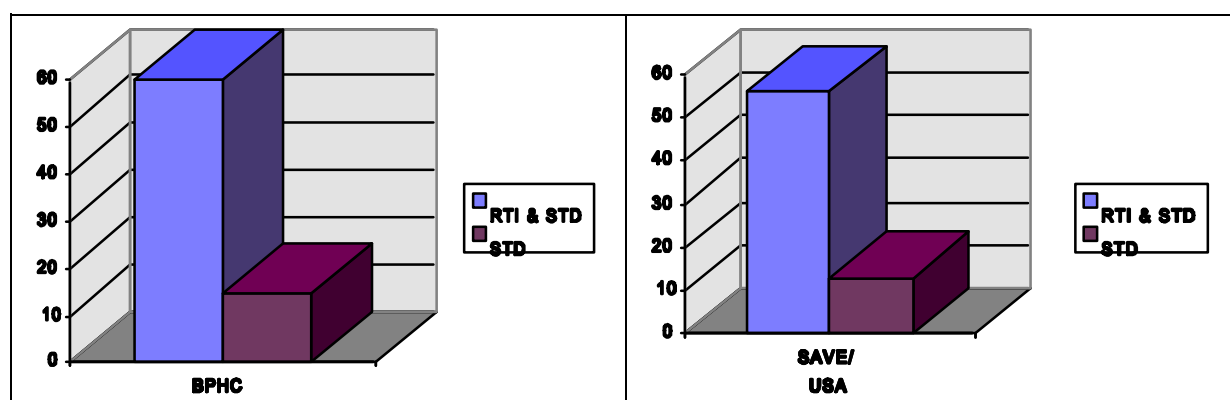
(USA) study sought in-depth information about sexual behavior as it relates to RTIs. The respondents had many ideas about RTIs and how these are caused. Common beliefs include unhygienic practices like bathing in dirty water or using dirty clothes as reasons for RTIs. Few mentioned causal relationships between either child birth practices (i.e. manual manipulation of placenta introducing infection) or menstrual practices (i.e. using unwashed rags for sanitary protection) as potential infection transmitters. Though some certainly understood the relationship between RTIs and sexual life, none used preventive behavior (e.g. condoms or abstinence during infection).

These studies, though limited to small populations, are consistent in their findings and lead to a general conclusion

suggested that if their findings are consistent for the country, 11 million women in Bangladesh could have RTIs.

## ***THE QUALITY OF DELIVERY OF FAMILY PLANNING SERVICES IN THE NATIONAL PROGRAM***

The symptoms of RTIs are similar to some side effects of certain methods of contraception -- particularly IUDs. In Bangladesh half of contraceptive users stop using within 12 months of starting; one-fifth of those who stop do so as a result of side effects or health concerns with the methods (BDHS 1993-94). As many as 30 percent of women cite this as the reason for discontinuing the use of IUD, while for injection the rate of



one percent of cases and with government family planning workers in less than one percent.

The second Save the Children

that RTIs are a significant health problem for women of reproductive age. Save the Children concluded from their data that half of the women of reproductive age were RTI effected. They further

discontinuation due to side effects or health concerns is even higher. Nearly 70 percent of IUD discontinuation is attributed to side effects/health concerns while the same

reasons are cited in 66 percent of injection dis-continuation cases.

Because family planning service providers have not been trained to diagnose and treat RTIs, the relationship between an existing RTI condition and side effects of contraception are not being effectively managed. Instead the client stops using a contraceptive because of side effects while the pre-existing RTI condition which may be causing the symptom is undiagnosed and not treated. Thus, a client is left at even greater potential health risk. The RTI problem continues and can be exacerbated by an unwanted pregnancy because she is no longer actively contracepting.

There is sufficient evidence that family planning service providers, especially Family Welfare Visitors (FWVs), are aware that their clients are in need of RTI services. As early as 1984, a study of the GOB IUD program identified leukorrhoea as **the most common complaint of IUD acceptors which can lead to serious side effects if left untreated.**

Throughout the years other studies, particularly related to IUD services, point to similar problems. The **IUD Annual Evaluation 1990** (Kamal, 1990) lists "client side effects" as a major problem for IUD services. The study recommends that for the "...

significant minority of clients (6 %) who complain of vaginal discharge, a detailed medical study of RTIs might be useful.

In the longer term, better training of FWVs in diagnosis and treatment of RTIs would be very beneficial."

A study designed to compare the three IUDs available in the national program (TCU 200,380A and ML 375) reported that 49 percent of IUD acceptors experienced symptoms of pelvic inflammatory disease during the three months prior to insertion (Akhter et al., 1996). Of those reporting symptoms, 71 percent mentioned white discharge while nearly 10 percent reported lower abdominal pain. Eighteen percent responded that they had a combination of symptoms.

In 1994 Family Welfare Assistants (FWAs) and Family Planning Inspectors (FPIs) were interviewed on their perceptions of the IUD acceptance decline (Nessa et al., 1994). One fourth of the FWAs cited **white discharge** and **lower abdominal pain** as reasons for a decrease in IUD acceptance. While one third of FPIs responded that **nonspecific side effects** were the main reason for decrease in IUD acceptance, several also mentioned specific RTI related symptoms.

Other recent studies have focussed on clinical skills of FWVs and their training

needs, as well as studies which have focused on the facilities where clinical family planning services are provided (Subrata et al., 1996; Ahlborg and Akhand, 1996; Barkat et al., 1994). Though these studies had some different objectives, all were concerned with essential improvements in quality of services.

The consistent finding of the studies is that FWV skills are, at best, "moderately satisfactory" for some aspects of family planning service delivery. Skills vary widely and one study particularly recommends that FWV basic clinical skills are in immediate need of improvement since **only 12 percent could perform an adequate clinical assessment; 19 percent followed appropriate infection prevention practice; 7 percent performed all steps of IUD insertion correctly and 30 percent were able to provide appropriate injection services** (Ahlborg and Akhand, 1996).

In another study (Barkat et al., 1994), findings on service provider skills were similar. Medical history taking is an essential element for providing clinical contraception. In HFWCs, service providers asked about vaginal bleeding, vaginal discharge and abdominal pain in only 8 percent of cases. A pelvic exam was performed in only 25 percent of cases. In higher order service points,

THCs and Maternal Child Welfare Centers (MCWCs), the service providers more consistently asked the essential questions about vaginal conditions. However, the performance of pelvic examination was done in only 20 percent in the MCWCs (even less than in the HFWC) and in 73 percent of the THCs. In Model Clinics, where optimal services should be expected, the performance of a pelvic exam was done in only 17 percent of cases.

### **SERVICE POINTS**

FWVs are quite aware of their own deficiencies in clinical skills. When asked what skills they needed immediate training for, more than 90 percent responded RTI diagnosis and treatment. Only 2.5 percent felt competent to handle RTIs with their present training (Ahlborg and Akhand, 1996).

Service center assessments have consistently pointed to deficiencies which already affect safe, infection-free family planning services. These deficiencies would have an even greater negative effect on the provisions of RTI services. For example, less than 30 percent of HFWCs have an operating autoclave to sterilize instruments. Only 55 percent had another method of sterilizing instruments safely (e.g. boiler). Antibiotics, essential for the treatment of infection, were available in only 40

percent of the HFWCs.

To provide RTI services privacy is required to conduct physical examinations and to provide counseling for clients. Only 18 percent of HFWCs have a separate medical examination room. Cleanliness is maintained in only 43 percent of the examination areas, a finding of great significance as it points directly to facilities as a place where infections may be spread rather than detected and cured.

Taken together, these findings indicate that family planning services may be causing harm to clients. There are several ways harm is being caused: (1) By failing to diagnose and treat RTIs prior to IUD insertion or MR procedures, preexisting conditions can be exacerbated; (2) Diagnosing an RTI but failing to treat it because the medications are not available; (3) Diagnosing an RTI but not providing the needed counseling on safe sexual behavior e.g., use of condoms during treatment, necessity of treatment of partner. If this is not done, the treated client can be immediately reinfected by an untreated spouse or partner; and (4) Performing pelvic examinations, required prior to IUD, Norplant or sterilization services, in conditions where asepsis is not maintained can introduce an infection in a previously healthy woman.

### **WHAT CONSTITUTES APPROPRIATE RTI SERVICES?**

There are two critical elements which need to be included in appropriate RTI services. First, IEC which includes basic health education on all modes of infection transmission (sexual and nonsexual), and sensitive counseling for clients with STIs. The counseling information encompasses safe sexual behavior, as well as partner management and treatment compliance of both partners. Second, diagnosis and treatment of infections in a confidential setting.

IEC, particularly health education, needs to be provided in diverse settings. It is essential to reach young women with lessons in hygiene and care during menstruation. Pregnant women, TBAs and other birth attendants, need information on infection transmission during child birth. In short, everyone who is a service provider needs to seek opportunities to inform women of all ages about these infections and their prevention.

IEC at a clinic level is essential to determine whether women have RTIs which they are not discussing. It is not unusual for women to "suffer in silence" either because the RTI is so common they feel it is "normal", or because they are ashamed. In order to help

women, service providers have to adopt a proactive approach. Most RTIs are not sexually transmitted, but caused by unhygienic practices. Clients need to understand that concept first and then learn how to care for themselves more effectively.

Counseling when an RTI is diagnosed as an STI is the most difficult. Yet if it is not done, the client may not understand the importance of safe sexual practice. Nor will she be able to convince her partner to use condoms and seek treatment. This will mean that she is constantly at risk of reinfection and increased morbidity.

The clinical services for diagnosis and treatment of RTIs is commonly based on a WHO developed **syndrome-based approach**. This is appropriate in a service site where laboratory facilities are not available. **Syndromic management is based on identifying consistent groups of symptoms and easily recognized signs-syndromes - and providing treatment which will deal with the majority of organisms responsible for producing each syndrome.... It has resulted in adequate treatment of more infected cases. It is relatively simple and cost-effective** (Pachauri 1995).

Using the syndrome-based approach the service provider learns to determine the pre-

sence or absence of infection on the basis of a series of behavioral questions and a clinical examination without the laboratory back up. This method is effective if the clinician is welltrained and has developed a skilled "clinical eye". However, it is possible to come to an incorrect diagnosis and either treat women who actually have no infection or under-diagnose and leave untreated women who do have an infection. In the BWHC study, the service providers diagnosed 40 percent more women as having RTIs than were confirmed by the laboratory testing. The implication is that these women would all have been treated unnecessarily if only the syndromic approach was used (Chowdhury et al,1995).

Because of the limited laboratory facilities in Bangladesh, the syndrome-based method has to be the method of choice for diagnosis and treatment in spite of its shortcomings. Yet the question of certain drug resistant strains of RTIs by the inappropriate use of antibiotics is an essential consideration and cannot be ignored. The bacteria which cause these infections have proven their ability to mutate and change as drugs are developed to combat them. Their remarkable properties have allowed them to survive, change and continue to infect populations in spite of increasingly sophisticated drugtherapy. In Bangladesh where antibiotics are used without

careful discrimination, the opportunity for the bacteria to become resistant to available drugs should be of great concern to service providers.

One approach to service delivery is suggested in Table 1.

### ***WHAT ARE THE COSTS OF INTRODUCING AND MAINTAINING AN RTI PROGRAM IN BANGLADESH?***

Costs for an RTI program are in three broad categories: training/retraining of service providers and counselors; improvement of facilities and equipment to ensure quality service delivery; and, costs of essential drugs.

#### ***(i) TRAINING SERVICE PROVIDERS***

The FWV is the most likely service provider for initial RTI diagnosis and treatment because of her training as a primary service provider of family planning services. The FWV refresher training would need to be revised and expanded to include the necessary clinical skills. It is unfortunate that the basic clinical skill seem to be lacking even for family planning services so there is a not a strong basis to build the RTI program upon. Instead the basic training will need to be redesign-ed and refresher training, which concentrates on the development of clinical and RTI diagnostic skills, is demanded.

# Table 1

## SERVICES FOR THE PREVENTION AND TREATMENT OF RTIS AND STIS AT DIFFERENT LEVELS OF THE HEALTH SERVICES SYSTEM

| Household Level  | HFWC and Satellite Clinic  | THC and MCWC   | District Hospital and Model Clinic   |
|--|--|--|--|
| Sexuality and gender information, education and counseling for adolescents, youth, men and women | Sexuality and gender information, education and counseling for adolescents, youth, men and women   | Sexuality and gender information, education and counseling for adolescents, youth, men and women | Sexuality and gender information, education and counseling for adolescents, youth, men and women |
| Household-based condom distribution  | Provision of condoms   | Provision of condoms   | Provision of condoms   |
|  | Pilot testing of the syndromic approach  | Pilot testing of the syndromic approach  | Pilot testing of the syndromic approach  |
|  | Referral of women with vaginal discharge, lower abdominal pain and genital ulcers, and men with urethral discharge, genital ulcers, and swelling in the scrotum or groin | Diagnosis and treatment of some infections and referral of others                                | Laboratory diagnosis and treatment   |
|  | Partner notification and referral  | Partner notification treatment and referral  | Partner notification treatment and referral  |
|  |  | Routine syphilis testing in antenatal women  | Routine syphilis testing in antenatal women  |
|  |  | Management of referred cases and feedback to referral source                                     | Management of referred cases and feedback to referral source                                     |
|  | Routine prophylaxis for gonococcal infections of the newborn   | Routine prophylaxis for gonococcal infections of the newborn                                     | Routine prophylaxis for gonococcal infections of the newborn                                     |

Adapted from Pachauri (1995)

At the same time, the interpersonal skills for counseling RTI clients, particularly those with STIs, have to be taught. It requires special training to develop the talent of providing the health education to clients, discussing safe sex and handling partner management.

### **(ii) *FACILITIES AND EQUIPMENT***

Facilities and equipment would need to be upgraded to ensure that privacy can be maintained for clients, as well as the mandatory aseptic conditions.

Without these elements being improved, it will not be possible to provide infection free services.

### **(iii) *COST OF ESSENTIAL DRUGS***

If the prevalence of RTIs across the entire population of women of reproductive age in Bangladesh is assumed to be the same as was found by Wasserheit in Matlab in the 1980's, then it is possible to estimate the approximate costs of treatment of those infections.

If we take the current number of married women of reproductive age at 28 million, then the Matlab prevalence would suggest that about 3.5 million women would report one or more symptoms of an RTI (there would of course be additional asymptomatic women). If only those women who report symptoms were subject to laboratory inves-

tigation, then some 1.65 million would be confirmed as having one or more infections.

Of these, 89 percent would be vaginal infections, 51 percent would be lower reproductive tract infections, 30 percent would be cervical, 5 percent would be PID.

Taking the currently recommended (by Johns Hopkins University & WHO) regimes of treatment, and using single unit commercial prices 'off-the-shelf', the total cost of treatment would be the relatively small amount of US \$1.25 million. This is for a single treatment of all detected infected women, it does not include partner treatment, or reinfection, issues which have serious implications for costs.

This cost would be considerably reduced if the Government was providing the treatment as they would purchase in bulk and without taxes. The cost of purchasing, storing, transporting and administering these treatments is not included here.

The cost of diagnosing these infections using the usual laboratory procedures, and at commercial rates, would however be in the order of \$55 million, or about 40 times the cost of treatment! This dramatic comparison highlights the need for a non-clinical approach to diagnosis where possible, namely a syndromic approach of some kind.

Clearly, in Bangladesh, even if

the funds were available for such a number of diagnoses, the laboratory facilities and staff, and even the institutions to train lab staff, simply do not exist and are not likely to in the foreseeable future.

## ***THE POLICY QUESTIONS***

As an essential element of improved reproductive health, the education of the client, as well as the diagnosis and treatment of RTIs must be undertaken. The family planning clinic-based service delivery program is an entry point for both education and services. Another potential entry point is during antenatal and postnatal care which is performed in the same facilities and by the same providers as the clinical family planning program.

Questions which require the attention of policy makers and program managers include:

Who will become the primary service provider for providing information and counseling, as well as diagnosis and treatment of RTIs? How will this service provider need to be trained/ retrained to perform these new functions?

Will services be provided at HFWCs or will these service points only offer initial screening and referral to higher order services? If diagnosis and treatment is to be done at HFWCs, what equipment and essential supplies will be needed?

What will the GOB policy be on bearing the costs of RTI treatment? Will this be provided free or will the client have to pay for the essential treatment medications?

Of the various programs under reproductive health which include many essential health services how important are the RTI services? What level of emphasis should it have in the constellation of services being offered at the government service points?

A demand-side issue that policy makers would have to address is how to motivate or encourage women to break away from the "culture of silence" and seek medical treatment for their RTI related problems. This would involve providing basic education/information on RTIs to potential clients as well as "sensitizing" service providers toward the treatment and counseling for RTIs.

Can the RTI prevention and treatment program be linked to the HIV/AIDS work which is on-going in Bangladesh? Can these have a synergistic relationship which can increase the impact of each program?

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*It was funded by USAID Grant No. CCP-3050-A-00-4013-00. and USAID Contract No.DPE-3030-C-00-0022-00)*

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